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UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/646,665	11/27/2000	Masaaki Higashida	MAT-8014US	5725

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EXAMINER
MILLS, DONALD L

ART UNIT	PAPER NUMBER
2662	

DATE MAILED: 06/15/2004   11

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.		Applicant(s)	
Office Action Summary	09/646,665		HIGASHIDA ET AL.	
	Examiner		Art Unit	
	Donald L Mills		2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _16 April 2004_.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-16_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-6 and 8-16_ is/are rejected.

7)☒ Claim(s) _7_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _9_.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2.   Claim 16 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for

failing to particularly point out and distinctly claim the subject matter which applicant regards as

the invention.

Regarding claim 16, the claim specifies *each block* (Claim 16, line 7,) however it is

unclear as to which *block* this refers, either the block header or the transmission header. Further

clarification is necessary. For the purpose of this examination, the examiner will interpret this

line as *each transmission header includes...*

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4.   Claims 1, 2, and 12-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Ayerst

et al. (US 5,712,624), hereinafter referred to as Ayerst.

Regarding claims 1 and 14, Ayerst discloses a method and apparatus for receiver

synchronization, which comprises:

Generating (Claim 1)/Means for generating (Claim14) a fixed pattern comprising 'm'

words (Referring to Figure 7, ending with seven consecutive 1's. See column 17, lines 30-31.)

Generating (Claim 1)/Means for generating (Claim14) variable patterns that are

predetermined, each pattern comprising 'n' words (Referring to Figure 7, a pseudo random

pattern, which is planned to be random, is generated, comprising 128-bits or 16 bytes. See

column 17, lines 28-30.)

Generating (Claim 1)/Means for generating (Claim14) a sync pattern comprising 'q'

words formed by combining the fixed pattern and the variable pattern (Referring to Figure 7, a

128-bit synchronization preamble packet **650** is generated, which comprises a pseudo random

pattern and seven consecutive 1's. See column 17, lines 28-31.)

Controlling (Claim 1)/Means for Controlling (Claim 14) the step for making a bit

structure included in at least two consecutive packets include different variable patterns

(Referring to Figure 7, synchronization preamble packet **650** followed by symbol

synchronization adjustment segment **612**, which inherently comprise different bit patterns.)

Regarding claim 2, Ayerst discloses *wherein the variable pattern comprises a plurality of*

words, and the variable patterns are made by changing an order of the words (Referring to

Figure 7, pseudorandom pattern comprises 128-bits, which inherently comprises patterns made

by changing the order of the bytes. See column 17, lines 28-30.)

Regarding claim 12, Ayerst discloses *the method including a step of detecting a sync*

(Referring to Figure 7, indicating when a transmission of a message is scheduled to begin. See

column 16, lines 31-33.)

Regarding claims 13 and 15, Ayerst discloses a method and apparatus comprising:

Detecting (Claim 13)/Means for detecting (Claim 15) a sync for examining both of a fixed

pattern and a variable pattern of a data received (Referring to Figure 7, indicating when a

transmission of a response message is scheduled to begin, inherently comprising a

pseudorandom and fixed pattern of seven 1's. See column 16, lines 30-33 and column 17, lines

29-31.)

Securing (Claim 13)/Means for securing (Claim 15) a sync for examining only the fixed

pattern (Referring to Figure 7, during synchronization the fixed pattern of seven 1's is inherently

examined individually in order to determine the value of each bit. See column 17, lines 34-35.)

Wherein step (a) processes the data until the sync is secured and step (b) processes the

data after the sync is secured (Referring to Figures 7, the data unit comprises a synchronization

preamble packet **650**, inherently processed until the synchronization is established, and three data

packets **625**, inherently processed after the last of the seven consecutive 1's. See column 16,

lines 40-41 and 43-45.)

Regarding claim 16, Ayerst discloses *adding a transmission header of 's * k' words,*

wherein the transmission header is divided into 'k' pieces of blocks at intervals of every 's' word

(Referring to Figure 7, data unit **312** comprises a synchronization preamble packet **650**,

comprising one hundred twenty eight bits or 16-bytes, which repeats for every data unit. See

column 17, lines 29-30.) And, *each transmission header includes the fixed pattern of 'm' words*

at a top thereof (Referring to Figure 7, the synchronization preamble packet **650** ends with seven consecutive 1's. See column 17, lines 30-31,) *the fixed pattern employs a pattern other than patterns used in the block header* (Referring to Figure 7, the seven consecutive 1's inherently differs from the six bit transmitter ramp up segment **611** by 1-bit. See column 17, lines 14-15.)

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 3-6 rejected under 35 U.S.C. 103(a) as being unpatentable over Ayerst et al. (US 5,712,624), hereinafter referred to as Ayerst.

Regarding claim 3 as explained above in the rejection statement of claim 1, Ayerst discloses all of the claim limitations of claim 1 (parent claim). Ayerst does not disclose *wherein the fixed pattern comprises three words.*

Ayerst teaches ending the synchronization preamble packet **650** with seven consecutive 1's (See column 17, lines 30-31.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement twenty-four consecutive 1's in the synchronization preamble packet of Ayerst. One of ordinary skill in the art would have been motivated to do so in order to simplify the preamble packet and reduce processing time of the pseudo random pattern generator.

Regarding claim 4 as explained above in the rejection statement of claim 1, Ayerst

discloses all of the claim limitations of claim 1 (parent claim). Ayerst does not disclose *wherein*

the three words include 'eb', 'cb' and 'aa', expressed in a hexadecimal notation.

Ayerst teaches ending the synchronization preamble packet **650** with seven consecutive

1's, equivalent to 7F in hexadecimal (See column 17, lines 30-31.)

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to combine three different fixed patterns in the synchronization preamble packet of

Ayerst. One of ordinary skill in the art would have been motivated to do so in order to simplify

the preamble packet and reduce processing time of the pseudo random pattern generator.

Regarding claim 5 as explained above in the rejection statement of claim 1, Ayerst

discloses all of the claim limitations of claim 1 (parent claim). Ayerst does not disclose *wherein*

the variable pattern comprises five words.

Ayerst teaches a one hundred and twenty eight-bit, 16-bytes, synchronization preamble

packet **650** (See column 17, lines 28-29.) Ayerst further teaches optimizing throughput by

keeping messages as short as possible (See column 19, lines 26-28.)

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to reduce the length of the synchronization preamble packet to five pseudorandom

bytes. One of ordinary skill in the art would have been motivated to so in order to optimize

system throughput.

Regarding claim 6 as explained above in the rejection statement of claim 1, Ayerst

discloses all of the claim limitations of claim 1 (parent claim). Ayerst further discloses *words*

including '4c', 'ea', 'cd', '7a' and '81', expressed in a hexadecimal notation (Referring to

Figure 7, one hundred and twenty eight-bit, 16-bytes, synchronization preamble packet **650**, which comprises a pseudo random pattern generated by an eight bit generator, inherently comprises the previously mentioned bytes (See column 17, lines 28-30.) Ayerst does not disclose *five words*.

Ayerst teaches a one hundred and twenty eight-bit, 16-bytes, synchronization preamble packet **650** (See column 17, lines 28-29.) Ayerst further teaches optimizing throughput by keeping messages as short as possible (See column 19, lines 26-28.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to reduce the length of the synchronization preamble packet to five pseudorandom bytes. One of ordinary skill in the art would have been motivated to so in order to optimize system throughput.

7.   Claims 8-11 rejected under 35 U.S.C. 103(a) as being unpatentable over Ayerst et al. (US 5,712,624), hereinafter referred to as Ayerst, in view of Lawrence et al. (US 6,208,666 B1), hereinafter referred to as Lawrence.

Regarding claim 8 as explained above in the rejection statement of claim 1, Ayerst discloses all of the claim limitations of claim 1 (parent claim), Ayerst does not disclose *wherein the packet data is a digital video signal.*

Lawrence teaches system and method for maintaining timing synchronization in a digital video network where digital video enters customer premises **1300** from central office **400** via a wireless communication channel **16** (See Figure 16, column 22, lines 8-9 and 16.) Ayerst

teaches that in a data communication system it is desirable to use the shortest possible

synchronization preamble for a data packet to maximize throughput (See column 1, lines 16-20.)

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to implement synchronization preamble optimization of Ayerst in the system of

Lawrence. One of ordinary skill in the art would have been motivated to so in order to utilize the

full bandwidth capacity of the network.

Regarding claim 9 as explained above in the rejection statement of claim 1, Ayerst

discloses all of the claim limitations of claim 1 (parent claim), Ayerst does not disclose *wherein*

the digital video signal is a compressed signal.

Lawrence teaches system and method for maintaining timing synchronization in a digital

video network where compressed digital video enters customer premises **1300** from central

office **400** via a wireless communication channel **16** (See Figure 16, column 22, lines 8-9 and 15-

16.) Ayerst teaches that in a data communication system it is desirable to use the shortest

possible synchronization preamble for a data packet to maximize throughput (See column 1,

lines 16-20.)

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to implement synchronization preamble optimization of Ayerst in the system of

Lawrence. One of ordinary skill in the art would have been motivated to so in order to utilize the

full bandwidth capacity of the network.

Regarding claim 10 as explained above in the rejection statement of claim 1, Ayerst

discloses all of the claim limitations of claim 1 (parent claim), Ayerst does not disclose *wherein*

the compressed signal is a DIF stream.

Lawrence teaches system and method for maintaining timing synchronization in a digital

video network where compressed digital video stream enters customer premises **1300** from

central office **400** via a wireless communication channel **16** (See Figure 16, column 22, lines 8-9

and 15-16.) Ayerst teaches that in a data communication system it is desirable to use the shortest

possible synchronization preamble for a data packet to maximize throughput (See column 1,

lines 16-20.)

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to implement synchronization preamble optimization of Ayerst in the system of

Lawrence. One of ordinary skill in the art would have been motivated to so in order to utilize the

full bandwidth capacity of the network and support digital playback devices for video-on-

demand services.

Regarding claim 11 as explained above in the rejection statement of claim 1, Ayerst

discloses all of the claim limitations of claim 1 (parent claim), Ayerst does not disclose *wherein*

the packet data is transmitted through an ATM transmission line.

Lawrence teaches system and method for maintaining timing synchronization in a digital

video network where communication is performed over connection **112** with ATM switch **102**

(See Figure 4, column 7, lines 26-27.) Ayerst teaches that in a data communication system it is

desirable to use the shortest possible synchronization preamble for a data packet to maximize

throughput (See column 1, lines 16-20.)

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to implement synchronization preamble optimization of Ayerst in the system of

Lawrence. One of ordinary skill in the art would have been motivated to so in order to utilize the full bandwidth capacity of the network for Internet traffic.

Allowable Subject Matter

8.   Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

9.   Applicant's arguments filed March 16, 2004 have been fully considered but they are not persuasive.

Rejection Under 35 USC § 112

On page 7 of the remarks, regarding claim 16, Applicant argues that the word "block" would be readily understood by one skilled in the art having read the application. Examiner respectfully agrees. However, it would not be readily understood as to whether the term "each block" (See claim 16, line 7,) refers to the block in the block header or the transmission header.

Rejection Under 35 USC § 102

On page 8 of the remarks, regarding claims 1 and 14, Applicant argues that Ayerst does not disclose "generating variable patterns that are predetermined." Examiner respectfully disagrees. Ayerst discloses generating a pseudo random pattern, which is planned to be random, comprising 128-bits or 16 bytes (See column 17, lines 28-30.) Therefore, Ayerst discloses "generating variable patterns that are predetermined."

Rejection Under 35 USC § 103

On page 11 of the remarks, regarding claims 3-6 and 8-11, Applicant argues that Ayerst

does not disclose "generating variable patterns that are predetermined." Examiner respectfully

disagrees for the reasons stated above.

Conclusion

10.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing
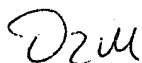
date of this final action.

11.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Donald L Mills whose telephone number is 703-305-7869. The

examiner can normally be reached on 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Hassan Kizou can be reached on 703-305-4744. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Donald L Mills

June 7, 2004

JOHN PEZZLO
PRIMARY EXAMINER